

Japanese Encephalitis

Information for Veterinarians

WHAT IS JAPANESE ENCEPHALITIS (JE)?

Japanese encephalitis (JE) is a mosquito-borne viral disease that can cause reproductive losses and encephalitis in susceptible animal species. It is caused by Japanese encephalitis virus which is a member of the Flavivirus genus.

How is it transmitted?

The virus is primarily spread by mosquitoes feeding on infected animals and does not usually spread directly from animal to animal (i.e. it is not considered contagious). Certain types of mosquitoes can become infected with JE virus such as *Culex sp.* and these tend to be most active at dawn and dusk.

Pigs with the infection do not transmit the infection to other animals but may infect mosquitoes if bitten while they still have the virus in their blood.

Other livestock such as horses, cattle, sheep and goats are 'dead end' hosts and cannot transmit the disease back to mosquitoes.

In general, spread of the virus is through the movement of herons and egrets and through the movement of infected mosquitoes, often over long distances due to wind dispersal.

What are the symptoms of Japanese encephalitis in animals?

In pigs the most common clinical signs are mummified and stillborn or weak piglets, some with neurological signs. Other farms are seeing overterm litters being born where some of the piglets have no brains. In a naïve population, litters from sows and gilts are expected to be equally affected. Adult sows and piglets infected post-birth do not show overt signs of disease and appear quite healthy. Boars, if present on farm, may experience fever, infertility and oedematous, congested testicles.

In horses many cases are asymptomatic and most clinical disease is mild, however more severe encephalitis can occur which can be fatal. Signs include fever, jaundice, lethargy, anorexia and neurological signs which vary with severity of the clinical disease. Neurological signs can include incoordination, difficulty swallowing, impaired vision, and rarely a hyperexcitable form occurs. Disease has also been reported in donkeys.

WHAT HAPPENS IF A CLIENT HAS A SUSPECTED CASE?

If you suspect Japanese encephalitis in any animal, phone the all-hours **Emergency Animal Disease Watch Hotline (1800 675 888)**.

What should be collected in the field?

Post-mortem samples from deceased (<12 hours) and euthanased piglets from affected litters

Necropsy three (3) aborted / stillborn / neonatal piglets

- Fresh samples (or frozen) of cerebral cortex or CSF if no tissue, placenta in individual containers, plus another container of pooled tissues from the spleen, heart, lung, liver and kidney.
- Fixed samples from one (1) piglet (i.e. not from mummified foetuses): brain, cervical spinal cord, lung, heart, liver, kidney and placenta.

Whole fresh aborted or stillborn foetuses are also suitable for submission where samples can't be collected on farm. Undertake the investigation, complete the [RODE forms](#) as described and follow the sample submission guidelines in the [Significant Disease Investigation Guide – Pigs. SDI](#)

Be aware of this and other potential zoonoses – collect samples carefully and wear appropriate PPE including gloves, eye protection and a mask. The danger during sample collection is from splash or stick injuries.

Submitting samples and reports

Veterinary Diagnostic Services

AgriBio Specimen reception

Main loading dock

5 Ring Rd

La Trobe University

Bundoora 3083

Phone: (03) 9032 7515

Email: vet.diagnostics@agriculture.vic.gov.au

The samples will undergo a suite of triage tests that are targeting Flavivirus (which is the group that Japanese encephalitis belongs to). This will take about three days.

If the samples return a negative result at this initial stage, you will be contacted by Agriculture Victoria staff.

If they return a positive signal the samples will go to the CSIRO Australian Centre for Disease Preparedness for further testing which may take up to a week. Testing times will likely shorten as laboratory capacity increases.

You will be contacted by Agriculture Victoria staff and will be provided with results. If the results are positive for Japanese encephalitis, you will be provided further information and advice.

How do I protect myself from Japanese encephalitis?

There are two ways to protect yourself: avoiding mosquito bites and vaccination.

The Department of Health recommends people protect themselves and their families against mosquito-borne diseases:

- Wear long, loose fitting clothes outdoors.
- Use effective mosquito repellents containing picaridin or DEET on all exposed skin.
- Try to limit outdoor activity if lots of mosquitoes are about.
- Use 'knockdown' fly sprays and plug-in repellent devices indoors.
- Sleep under mosquito nets treated with insecticides if you don't have flywire screens on windows on your home or are sleeping in an untreated tent or out in the open.
- Mosquito coils can be effective in small outdoor areas where you gather to sit or eat.
- Remove mosquito breeding sites like stagnant water around your property.

What are the symptoms of Japanese encephalitis in humans?

A small number of people infected with JE virus may become seriously ill with encephalitis (inflammation of the brain). Other people may develop an illness with fevers, headaches and aches and pains.

Symptoms of encephalitis may include rapid onset of fever, headache, sensitivity to light, neck stiffness, vomiting, confusion or disorientation and sometimes seizures, progressing to coma. Anyone experiencing symptoms, particularly if they've visited regions near the border of Victoria and New South Wales or been in contact with pigs or with mosquitoes should seek urgent medical attention.

What should I do if I suspect my staff, or I have Japanese encephalitis?

Any person who has been in contact with pigs and is experiencing any of the symptoms should seek urgent

medical attention. Further information can be found on the [Better Health website](#).

Is there a vaccine available for animals?

Vaccines for horses and pigs are used in some countries where the disease is endemic. No vaccines for animals are registered for use in Australia. The issues around vaccination of livestock are under consideration.

Will livestock movements be impacted?

Only confirmed Infected Properties are subject to quarantine. If livestock on your client's property have tested positive, Agriculture Victoria staff members will provide you and the producer with the relevant advice for livestock movement on and off your property. Human movements and other movements like feed trucks etc. are not affected.

Movement controls will continue to be assessed as the situation changes. Please continue to check the Agriculture Victoria website for the latest information.

ACCESSIBILITY

If you would like to receive this publication in an accessible format, please telephone 136 186.

This document is also available in HTML format at agriculture.vic.gov.au
